

Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

A 423.9
F767

3-9-41
4153
844



SOUTHERN FOREST PEST REPORTER

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
RECEIVED

U.S. DEPARTMENT of AGRICULTURE • FOREST SERVICE
SOUTHERN FOREST EXPERIMENT STATION

2026 St. Charles Avenue, New Orleans 13, Louisiana

CURRENT SERIAL RECORDS

No. 19

December 31, 1957

CONTROLLING THE TEXAS LEAF-CUTTING ANT ^{1/}

Compiled by

W. R. Holt

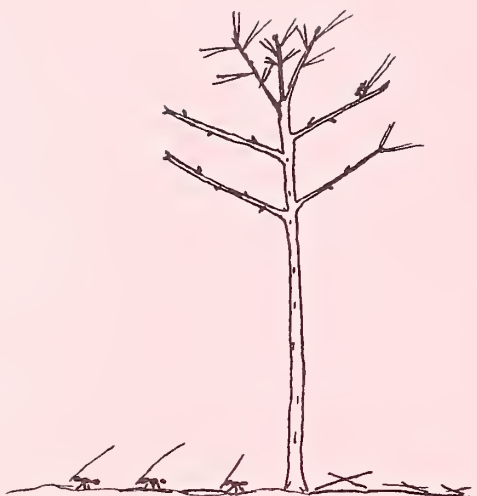
The Texas leaf-cutting ant, or town ant, is one of the worst enemies of pine seedlings in east Texas and west-central Louisiana. Where ant towns are numerous, they must be eradicated before pines can be established.

The ants strip the needles and leaves from a variety of plants, including pine and hardwood trees and many field crops. Large trees may be defoliated within several days, and small plants within a few hours. Pines are damaged most severely during the winter, when other green plants are scarce. Trees of sapling size or larger usually survive the damage, but seedling stands are often wiped out entirely.

The ants cut the leaves or needles into fragments that they carry below ground. The fragments are the "soil" for growing a fungus that is the only known food of these insects.

^{1/} Published and unpublished information accumulated by entomologists formerly or presently employed by the Southern Forest Experiment Station has been freely drawn upon in compiling this publication.

11
JH
mep
b.



Texas leaf-cutting ants can defoliate pine seedlings very rapidly. The ants carry the needles over their heads.

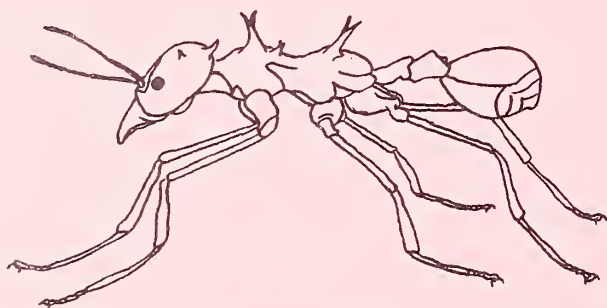
extend their underground galleries to considerable depths, often more than 10 feet. They make numerous cavities or chambers, some of them a foot or more in diameter, for growing the fungus and for rearing their young.

During their foraging, the ants clear trails that resemble miniature highways. As they file along these trails, each with a leaf or needle fragment held above its head, they appear as tiny people carrying parasols--hence the name "parasol ants."^{2/}

The nest typically has a large number of mounds, each circular or semi-circular in shape and with a funnel-like opening leading into the ground. The mounds may cover an area of several square feet to a quarter of an acre or more, depending upon the age of the colony. Where colonies are numerous, it is sometimes difficult to separate one from the other. The ants



Typical mounds of the Texas leaf-cutting ant.



Side view of a Texas leaf-cutting worker ant (x6-10).

Usually a colony will have several queens. The queens live in chambers below ground and lay eggs from which soft, white, immature forms develop. Most of these become worker ants that vary in size and perform different tasks. The largest workers, with powerful jaws, defend the nest, while others cut and gather leaf fragments and tend the fungus gardens. Life in the colony is complex but well organized.

^{2/} Other common names are "night ant," "pack ant," "cut ant," and "fungus ant." In Louisiana, farmers speak of it as the "red town ant" or "chisel head."

In May and June winged ants are produced. These represent the functional males and females. After they swarm and mate, the females (queens) establish new nests. Upon leaving her home colony each female carries in her mouth a small amount of fungus, which she cultures and subsequently uses to feed her young.

During the winter the queens of a colony are said to congregate in a central chamber. With the arrival of warm weather they apparently scatter outwards, sometimes becoming isolated from the main town.

The distribution of the ants is apparently limited by soil type. Most colonies are on sandy soil. A deep sandy surface soil underlain by a layer of clay seems to be preferred. On sloping ground, most colonies occur on southern and western exposures.

The activities of the ants are influenced by the temperature. During the winter, foraging is done during the day, and in the summer mostly at night. In general, the workers are inactive on cold, wet, or cloudy days, particularly in the morning hours.

CONTROL

Defoliation by the leaf-cutting ant appears very much like the work of several other leaf-chewing insects, particularly sawflies. Usually the injured trees are within sight of one of the colonies, or the ants themselves may be seen cutting the needles. Bits of the needles are left about the base of the trees and along the trails, which often extend several hundred feet out from the colony. During late fall and winter the fresh mounds of subsoil in the towns are very conspicuous.

When signs of the ants are found on areas to be planted or seeded to pine, a systematic effort must be made to locate all colonies within and adjacent to the planting areas. Scouting is sometimes done from horseback, as the additional height enables the observer to sight the colonies easily. It is best accomplished during the fall and early winter, when the mounds are not hidden by vegetation. To help the control crew to find them, all colonies should be marked with a stake or other device.

Fumigation with methyl bromide is the most effective control devised so far. At warm temperatures and atmospheric pressure, methyl bromide is a colorless gas, poisonous to humans as well as to ants but neither combustible nor explosive. Being about 3-1/2 times heavier than air, it penetrates into the underground chambers of the colony. The fumigant may be obtained liquified under pressure in one-pound cans.

The best time to apply the gas is in late fall or early winter, on cool, wet, or cloudy mornings, when the ants tend to remain underground. In general, applications during warm months have been unsatisfactory, probably because the colonies are less centralized and there is more chance of the gas failing to reach all the chambers and galleries.

The methyl bromide is applied with a special device consisting of a valve and a piece of flexible tubing attached to the can:

1. Insert about two feet of the tubing into one of the central openings to the colony. The mound may have to be cleared away to facilitate access to the hole.
2. Lightly tamp some soil around the tube and press on the packed soil with one foot, taking care not to pinch the tube. This will prevent the tube from whipping out of the hole when the valve is opened and the pressure in the can is released.
3. Hold the inverted can with one hand, open the valve with the other, and allow the gas to escape into the colony. The can may either be discharged entirely into one hole or divided among two to four holes of the same colony.

A one-pound can of gas usually is enough to kill the ants in a colony of average size--that is, one occupying about 600 square feet of surface soil. Larger colonies, or average colonies on loose, porous soils, may require two pounds of gas. If the colony is on a hillside, the gas should be applied to one of the uppermost openings rather than to a central hole.

In two to four weeks after being fumigated, the colonies should be revisited. Any that show signs of life should be re-treated.

CAUTION! Methyl bromide is poisonous and must be handled with great care. Inhaling it will cause dizziness, vomiting, and double vision; excessive exposure is fatal. Continued exposure to the liquid or gas may burn the skin. Out-of-doors, the gas may be used without a mask if precautions are taken to avoid inhaling it. The cans of gas should not be stored in buildings where people live or work.

